What is claimed is:

1. A high-voltage-stable electrolyte for a lithiated intercalation secondary battery, said electrolyte consisting essentially of about a 0.5 to 2M solution of a solute selected from the class consisting of:

a) $LiPF_6$; and

b) mixtures of $LiPF_6$ with up to about equal mole parts of $LIBF_4$,

dissolved in a mixture of non-aqueous dimethylcarbonate (DMC) and ethylene carbonate (EC) solvents wherein said solvents are present in a weight percent ratio range from about 95 DMC:5 EC to 20 DMC:80 EC.

2. An electrolyte according to claim 1 for a secondary battery comprising a negative electrode and a positive intercalation electrode wherein the intercalation compound consists essentially of $Li_{1+x}Mn_2O_4$ wherein x is in the range of 0 to about 1.

3. An electrolyte according to claim 2 wherein said solvents are present in a weight percent ratio range from about 80 DMC:20 EC to 20 DMC:80 EC.

4. An electrolyte according to claim 3 selected from the group consisting of:

a) an approximately 1M solution of $LiPF_6$ in a solvent mixture of about 33 DMC:67 EC;

b) an approximately 1.5M solution of $LiPF_6$ in a solvent mixture of about 67 DMC:33 EC; and

c) 1M to 2M solutions of approximately equal parts of $LiPF_6$ and $LiBF_4$ in a solvent mixture of about 50 DMC:50 EC.

5. A lithiated intercalation secondary battery comprising a positive electrode, a negative electrode, and an electrolyte consisting essentially of about a 0.5M to 2M solution of a solute selected from the class consisting of:

a) $LiPF_6$; and

b) mixtures of $LiPF_6$ with up to about equal mole parts of $LIBF_4$,

dissolved in a mixture of non-aqueous dimethylcarbonate (DMC) and ethylene carbonate (EC) solvents wherein said solvents are present in a weight percent ratio range from about 95 DMC:5 EC to 20 DMC:80 EC.

6. A battery according to claim 5 wherein said positive electrode comprises an intercalation compound combined with about 3-10 weight percent carbon black and about 1-5 weight percent inert binder.

7. A battery according to claim 6 wherein said carbon black is present in about a 4-7 weight percent ratio.

8. A battery according to claim 6 wherein said intercalation compound consists essentially of $Li_{1+x}Mn_2O_4$ wherein x is in the range of 0 to about 1.

9. A battery according to claim 8 wherein said solvents are present in a weight percent ratio range from about 80 DMC:20 EC to 20 DMC:80 EC.

10. A battery according to claim 8 wherein said electrolyte is selected from the group consisting of:

a) an approximately 1M solution of $LiPF_6$ in a solvent mixture of about 33 DMC:67 EC;

b) an approximately 1.5M solution of $LiPF_6$ in a solvent mixture of about 67 DMC:33 EC; and

c) 1M to 2M solutions of approximately equal parts of $LiPF_6$ and $LiBF_4$ in a solvent mixture of about 50 DMC:50 EC.

11. A battery according to claim 8 wherein said negative electrode consists essentially of a material selected from the group consisting of carbon and lithium metal.

12. A battery according to claim 8 wherein said negative electrode consists essentially of carbon and said electrolyte consists essentially of an approximately 1M to 1.5M solution of $LiPF_6$ in a solvent mixture of about 67 DMC:33 EC to about 33 DMC:67 EC.

13. A secondary battery comprising a negative electrode, a lithium intercalated positive electrode, and an electrolyte comprising a solution of a lithium salt in a non-aqueous solvent

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said electrolyte consists essentially of an approximately 0.5 to 2M solution of a solute selected from the class consisting of:

a) $LiPF_6$; and

b) mixtures of $LiPF_6$ with up to about equal mole parts of $LIBF_4$,

dissolved in a mixture of non-aqueous dimethylcarbonate (DMC) and ethylene carbonate (EC) solvents wherein said solvents are present in a weight percent ratio range from about 95 DMC:5 EC to 20 DMC:80 EC.

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14. A battery according to claim 13 characterized in that said positive electrode comprises an intercalation compound combined with about 3-10 weight percent carbon black and about 1-5 weight percent inert binder.

15. A battery according to claim 14 characterized in that said carbon black is present in about a 4-7 weight percent ratio.

16. A battery according to claim 14 characterized in that said positive electrode intercalation compound consists essentially of $Li_{1+x}Mn_2O_4$ wherein x is in the range of 0 to about 1.

17. A battery according to claim 14 characterized in that said electrolyte is selected from the group consisting of:
a) an approximately 1M solution of $LiPF_6$ in a solvent mixture of about 33 DMC:67 EC;
b) an approximately 1.5M solution of $LiPF_6$ in a solvent mixture of about 67 DMC:33 EC; and
c) 1M to 2M solutions of approximately equal parts of $LiPF_6$ and $LiBF_4$ in a solvent mixture of about 50 DMC:50 EC.

18. A battery according to claim 14 characterized in that said negative electrode consists essentially of a material selected from the group consisting of carbon and lithium metal.

19. A battery according to claim 14 characterized in that said negative electrode consists essentially of carbon and said electrolyte consists essentially of an approximately 1M to 1.5M solution of $LiPF_6$ in a solvent mixture of about 67 DMC:33 EC to about 33 DMC:67 EC.

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